

INFRA-HUMANITARIAN AID?  
HUMANIZING THOSE WHO GIVE INTERNATIONAL AID WHILE  
INFRAHUMANIZING THE RECIPIENTS

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## Abstract

Dehumanization is the term used to describe the process of denying humanity to others. The alleviation of dehumanization involves increasing the humanity we attribute to dehumanized others, and can be thought of as *rehumanization*. A large body of work on dehumanization has emerged in the last decade, however, little is known about rehumanization. The present work contributes to this literature by examining how knowledge of intergroup helping in the context of a natural disaster increases or decreases rehumanization of outgroups. I had American participants read a news article describing either an ingroup or an outgroup natural disaster and that country receiving various amounts of international aid. Half the participants were provided with information about hurricane Katrina (a national disaster) and varying amounts of aid (none vs. small vs. large) given to American victims by Pakistanis. The other half of the participants read about the 2010 Pakistan floods (a foreign disaster) and varying amounts of aid (none vs. small vs. large) given to Pakistani victims by Americans. Results revealed that Americans who read about hurricane Katrina and no mention of American victims receiving help, *infracategorized* both Americans *and* Pakistanis. However, those participants who went on to read about American victims receiving (small or large) help from Pakistanis, attributed significantly more secondary emotions to Pakistanis, but not Americans (e.g. ingroup *infracategorization* persisted). American participants who read about the 2010 Pakistan floods and no mention of Pakistani victims receiving help *infracategorized* Pakistanis but not Americans. Those participants who went on to read about Pakistani victims receiving (small or large) help from Americans did not show any change in secondary emotions attributed to either Americans or Pakistani's (e.g. outgroup *infracategorization* and ingroup *humanization* persisted). The discussion centres on the nuances of rehumanization strategies and intergroup relations.



## Introduction

Dehumanization is the term used to describe denying humanity to others. It has been called a perceptual conundrum, for perceiving someone who is human, as though they are not, is fundamentally inaccurate (Gervais, Bernard, Klein, & Allen, 2013). The alleviation of such a dehumanizing perception can therefore be thought of as a recalibration of perception and has been termed, *rehumanization*. Understanding the factors which influence how we attribute (humanization) and deny (dehumanization) humanity to others is an important field of enquiry for social psychologists because of the relationship between mind attribution and morality: Those we perceive to have a more complex mind are deemed more worthy of moral concern, whilst those we perceive to possess a lesser mind are afforded less moral concern. However, the inverse is also true, we tend to perceive those whom we treat well as possessing humanity and we tend to perceive those whom we do not treat so well as lacking humanity.

A large body of work on dehumanization has emerged in the last decade, however, little is known about *rehumanization*. The current work adds to the small, but growing literature on rehumanization by examining one way to alleviate dehumanization – by making intergroup helping (Saguy et al., 2015) salient after a natural disaster. I hypothesize that news of a previously dehumanized social outgroup helping the ingroup following a natural disaster, would lead to participants to attribute more humanity to the outgroup as an explanation for the outgroup's act of kindness. Moreover, I hypothesize that the humanity attributed to the outgroup would not be related to the amount of help given, in that even a token amount of help would lead participants to attribute more humanity to the outgroup. In addition, I hypothesize that news of the ingroup helping a previously dehumanized outgroup would also lead to more humanity attributed to the outgroup, and that the effect would be moderated by the amount of help given, in accordance with effort justification theory (Aronson & Mills, 1959). Specifically, I hypothesize that knowledge of the ingroup helping the outgroup would

lead to greater humanization of the outgroup; this effect will be especially strong when the ingroup gives lots of help to the outgroup compared to when only a token amount of assistance is offered.

I begin here by outlining Haslam's (2006) dual model of dehumanization, which describes what is denied to others when they are dehumanized. I then summarize the conditions which lead to more dehumanizing perceptions which provides the background to the experimental work on rehumanization.

### **Two types of Dehumanization**

Haslam's (2006) model of dehumanization highlights two qualitatively distinct forms of dehumanization, which can manifest in both blatant and subtle ways. The first, mechanistic dehumanization involves the denial of human nature (e.g. sentience), whereas the second, animalistic dehumanization, involves the denial of uniquely human characteristics (e.g. characteristics which differentiate us from other species; Haslam, 2006).

**Mechanistic Dehumanization.** Mechanistic dehumanization represents a denial of human nature (sentience) or the comparison of a sentient being to an inanimate object (Loughnan & Haslam, 2007). Sexualised women and objectified non-human animals are prime examples of the malleability of the type of targets who are subject to mechanistic dehumanization (Haslam, 2006; Heflick & Goldenberg, 2014; Bastian, Loughnan, Haslam, & Radke, 2012). While mechanistic dehumanization can involve the blatant denial of human nature toward a target or group, at the other end of the spectrum lay subtler and sometimes unconscious biases which are not always associated with prejudice (Waytz & Schroeder, 2014). For example, Caucasian Australians were found to possess implicit association between Asians and robots (Bain, Park, Kwok, & Haslam, 2009; Loughnan & Haslam, 2007).

**Animalistic Dehumanization.** In comparison to the denial of sentience associated with mechanistic dehumanization, animalistic dehumanization is defined as the denial of

uniquely human (HU) attributes – that which distinguishes us from animals – or the likening of humans to animals (Haslam & Loughnan, 2014). Nazi Germans' perception of Jews as vermin is an example of blatant dehumanization that was used to remove moral concern for Jews during World War II (Waytz & Schroeder, 2014).

A subtle form of animalistic dehumanization, however, can be measured in terms of secondary emotions prescribed to an outgroup, relative to one's in-group, and constitutes infrahumanization (Bain, Park, Kwok, & Haslam, 2009; Leyens, et al., 2000). Secondary emotions are those identified as uniquely exhibited by humans. Secondary emotions include remorse, forgiveness, shame, and guilt - these are contrasted with primary emotions which many animals experience, such as pleasure and pain (Demoulin, et al., 2004).

Infrahumanization presupposes the idea that some humans can be deemed less human than others and is evident when higher level of secondary emotions are attributed to one's ingroup relative to the outgroup (Leyens, et al., 2000) or when higher levels of primary emotions are associated with an outgroup over the ingroup (Rohmann, Niedenthal, Brauer, Castano, & Leyens, 2009). In addition, infrahumanization has been measured independently of ingroup emotions, by solely measuring outgroup secondary emotions (Albarello & Rubini, 2012) or outgroup secondary emotions relative to outgroup primary emotions (Vezalli, Capozza, Stathi & Giovannini, 2012). Taken together, infrahumanization is an intergroup phenomenon in that the attribution of more secondary than primary emotions to the ingroup can be thought of as ingroup favouritism; while the denial of secondary emotions to outgroups represents outgroup bias.

Though animalistic and mechanistic dehumanization are qualitatively different, neuro-imaging studies show that they are not mutually exclusive. For example, in one study using fMRI, Harris and Fiske (2006) showed that drug addicts and the homeless, who are perceived as low in warmth *and* low in competence, tend to face both mechanistic and

animalistic dehumanization (see also Fiske, 2009; 2013). After having participants view images of various social groups and objects, they found that social groups which elicit both types of dehumanization elicit less activation of the mPFC (medial prefrontal cortex), a region in the brain where activation tends to indicate social cognition, relative to exposure to other social groups who elicit only one type of dehumanization (e.g., animalistic *or* mechanistic) or neither. Such low activation of the mPFC was similar to activation occurring when people viewed non-social stimuli (Harris & Fiske, 2006).

While sometimes people may simultaneously exhibit animalistic and mechanistic dehumanization, at other times, people may only one or the other. For example, people may show animalistic, but not mechanistic dehumanization of Blacks in the US (e.g., Goff, Eberhardt, Williams, & Jackson, 2008) or mechanistic, but not animalistic dehumanization toward Asians in Australia (e.g., Bain et al., 2009). In a series of studies, Goff and colleagues (2008) highlighted that Americans implicitly associated Blacks with apes (e.g., animalistic dehumanization). In an archival study of actual criminal cases, the same authors revealed that news articles written about Blacks who receive capital punishment were more likely to contain ape-relevant language. In three cross-cultural studies, Bain, Park, Kwok, and Haslam, (2009) showed how people can show animalistic, but not mechanistic dehumanization, and also mechanistic but not animalistic dehumanization towards an outgroup. Specifically, Australian participants showed subtle mechanistic (but not animalistic) dehumanization of Chinese. Conversely, Chinese participants showed subtle animalistic (but not mechanistic) dehumanization of Australians. Taken together, what is clear is that both types of dehumanizing perceptions involve the denial of humanity; animalistic and mechanistic dehumanization both involve perceiving or treating someone who is human, as though they are not.

Classifying a group (or individual) outside of humanity is concerning because of the relationship between dehumanization and morality. Historically, dehumanization has been used to remove moral concern and justify atrocious intergroup behaviour, including the Nazi comparison of Jews to vermin during the holocaust and the comparison of the Tutsis to cockroaches in the Rwandan genocide (Opatow, 1990). More recently, numerous works have shown a negative relationship between dehumanization and the moral concern we have for various social groups in everyday life, including women (Loughnan, et al., 2010), ethnic outgroups (Cuddy, Rock, & Norton, 2007), lower socio-economic classes (Loughnan, Haslam, Sutton, & Spencer, 2014), and the homeless (Harris, & Fiske, 2006). In essence, when someone or a group dehumanizes others, they are calibrating their moral compass in order to remove the constraints of morality. The opposite process of rehumanization could then be thought of as a realignment, or recalibration, of one's (distorted) moral compass. Indeed, in reviewing the limited literature on rehumanization, each empirical study has focused on encouraging participants to more accurately consider those capacities that are denied in the dehumanization process.

What's more, dehumanization ranges on a spectrum of blatancy from an overt categorical denial of humanness (as seen in genocide) to a subtle denial of the emotions associated with humanity (e.g. as measured by infrahumanization). As such, rehumanization studies have also employed various levels of blatancy in their work.

## **Rehumanization**

All of the experimental studies on rehumanization to date have involved providing information to participants which, in one way or another, challenges dehumanizing perceptions. Challenging information has included providing participants with: (1) complex information about the target; (2) information about the perceiver; and (3) information

concerning intergroup relations. I now briefly review each of these three areas, which provided the rationale for the current work.

**Complex Information Surrounding the Target.** Three empirical studies have alleviated dehumanization by providing participants with complex information surrounding the target. For example, Albarello and Rubini (2012) experimentally reduced Italians' infrahumanization of Black immigrants by describing Blacks as complex (e.g., with a superordinate human identity alongside multiple other identities) rather than simple (comparing blacks to whites, in a dichotomous fashion). The authors suggest that describing dehumanized targets in a complex manner leads participants to attribute a more complex mind to the dehumanized target (Albarello & Rubini, 2012).

Awareness of common humanity, however, is not without its downfalls. Human identity has also been associated with reduced empathy and greater expectation of forgiveness following intergroup conflict (Greenaway, Louis, & Wohl, 2012) and excusing aggressive behaviour as "only human" (Haslam & Loughnan, 2014, p. 417). Prati, Vasiljevic, Crisp, & Rubini (2015) extended upon the limitations of priming common humanity by showing that thinking of a female in a counterstereotypic way can vicariously reduce dehumanization of a stigmatized third-party outgroup. Prati, Vasiljevic, Crisp, & Rubini (2015) had participants form an impression of a counterstereotypic female (i.e. a female mechanic) and then produce a list of adjectives to describe the target. The results showed that participants attributed more complex emotions to stigmatized outgroups (e.g. asylum seekers) after thinking of a counter stereotypical women versus a stereotypical women. Mediation analyses showed the effect was driven by a reduction in heuristic thinking. This study shows how untangling peoples stereotyped perceptions of others can lead to less dehumanization of a third-party.

The next two studies focussed on alleviating the dehumanization of sexualized women, as opposed to a third party. Specifically, Bernard and colleagues (2015) showed that providing humanizing information (versus no information) alongside pictures of a sexualized woman (in a sexy calendar), lead participants to see those women (pictured in the calendar) in a more human-like manner. The humanizing information surrounded the targets' warmth and competence. The dependent variable of interest was the type of processing which reflects whether participants perceive the target in a human-like (i.e. configurally) or object-like (analytically; indicative of mechanistic dehumanization) manner. The authors discuss their findings in light of the promise that drawing attention towards the internal states of women may have for alleviating dehumanizing perceptions of women.

**Information about the Perceiver.** Civile and Obhi (2015) reduced the dehumanization of sexualized women by manipulating the hierarchical thinking which is associated with dehumanization. Specifically, Civile and Obhi (2015) primed men and women with feelings of low versus high power and examined the participant's perception of sexualized women. The authors found that inducing female and male participants with feelings of low power (relative to high power), lead both women and men to perceive sexualized women in a more human-like way. This finding suggests that not only does how we perceive others influence whether we attribute them humanity, but perhaps just as importantly, how we perceive *ourselves* plays a role in reattributing humanity to others. Notably, the previous two studies (Bernard, et al., 2015; Civile & Obhi, 2015) are the first of their kind to alleviate the dehumanizing perception of women that is associated with sexual objectification (Fredrickson & Roberts, 1997).

**Intergroup Relations.** Just as perceptions of the self and others have informed rehumanization strategies, positive intergroup relations between one's ingroup and outgroups have also been an avenue for alleviating dehumanization. In an experimental study, imagined

prosocial intergroup contact increased Italian children's attribution of secondary emotions towards immigrants (Vezzali, Capozza, Stahi, & Giovannini, 2012). The children were instructed to imagine interacting with an immigrant child and think about what nice things the participant could say to the immigrant child to become friends together. Interestingly, the impact of their study was maintained for a week after the manipulation and highlights how even *imagining* positive intergroup relations with outgroup members can alleviate dehumanization of immigrants.

Historically, dehumanization has been used to remove moral concern and justify atrocious intergroup behaviour. People often dehumanize others to justify the ingroup's mistreatment of the outgroup (Bandura 2002; Opatow 1990; Castano & Giner-Sorolla, 2006), or to justify failing to help the outgroup in times of need (e.g., following a natural disaster: Andrighetto, Baldissarri, Lattanzio, Loughnan, & Volpato, 2014; Cuddy, Rock, & Norton, 2007). Following this rationale, Saguy and colleagues (2015) theorized that people would rehumanize an outgroup if reminded of a time when the ingroup *helped* the outgroup. Saguy and colleagues (2015) found evidence for this hypothesis in a field experiment in war-torn Israel. The authors had Israeli participants read a short story about Israeli doctors (ingroup members) volunteering to help Palestinian children (outgroup members) in the Gaza strip, an area of ongoing battle between the two groups. Relative to controls, participants who read about the *ingroup* helping the outgroup showed a decrease in dehumanization of the outgroup.

Additional research demonstrates that knowledge of an outgroup helping a third party may also reduce dehumanization of the outgroup that offered assistance (Delgado, Betancor, Rodríguez-Pérez, & Ariño, 2012). In an experimental study, these authors had Spanish participants read about Ethiopians helping Somalians during a Somalian famine. Compared to



a control condition, participants who read about Somalians prosocial behaviour attributed more secondary emotions to the outgroup.

## **Current Research**

Drawing on these previous studies, I tested whether knowledge of the *outgroup helping the ingroup* would also influence blatant and subtle dehumanization. I also aimed to replicate Saguy and colleagues' (2015) work to examine whether knowledge of ingroup helping the outgroup influences blatant and subtle dehumanization with American participants in a non-violent intergroup context. Moreover, I also wished to examine whether these effects would further depend on whether the amount of help being offered is big or small. Previous research suggests that people experience greater attitude change as a function of the amount of effort expended (i.e., effort justification; Aronson & Mills, 1959). In the context of the present research, this may imply that participants exhibit more rehumanization of an outgroup if Americans helped at a greater cost to themselves, compared to when the help is more minimal. However, when the outgroup offers assistance to the ingroup following a natural disaster, it would highlight the outgroup's humanity and reduce dehumanization regardless of the cost to the outgroup. As previous rehumanization studies have varied in the blatancy of dehumanization they have measured, I used both subtle (attributions of primary and secondary emotions) and blatant measures of animalistic dehumanization. Alleviation of inhumanization has previously been shown via an increase in secondary emotions attributed to the outgroup. Moreover, as previous research on rehumanization has not examined ingroup emotions following rehumanization strategies, I measured both outgroup *and* ingroup, secondary and primary emotions, however, I did not have any pre-planned hypotheses surrounding attributions of emotions to the ingroup.

The current research tested these hypotheses with an American sample by (1) highlighting various amounts of aid (none vs. small vs. large) given by Pakistan to Americans

following hurricane Katrina (an American natural disaster); or (2) by highlighting various amounts of aid (none vs. small vs. large) given by Americans to Pakistan following the 2010 Pakistani floods (a Pakistani natural disaster).

My hypotheses were therefore that (1) news of Pakistan helping America (regardless of amount of aid provided) following hurricane Katrina, compared to news of the disaster alone, would lead to rehumanization of Pakistanis; (2) news of America helping Pakistan following the 2010 Pakistan floods would lead to rehumanization of Pakistanis in proportion to the amount that the ingroup helped, such that Pakistanis would be rehumanized to a greater extent when the US offered a more significant amount of aid and support relative to less. I did not have specific hypotheses for which measures would show rehumanization, however, alleviation of inhumanization (subtle dehumanization) would be evident via an increase in the secondary emotions attributed to the outgroup.

### **Pilot study**

A pilot study was first used to identify the ideal target outgroup for the main study. The outgroup that was to be used in the main study needed to meet the following criteria. Firstly, the outgroup had to have a baseline level of dehumanization by Americans. Secondly, the outgroup had to have reciprocal international aid with America following a natural disaster. Specifically, the outgroup had to of publically offered help to the USA following a recent natural disaster in America. Similarly, America had to of publically offered help to the outgroup following a recent outgroup natural disaster. Lastly, these two disasters had to be equivalent in terms of fatalities and impact on the country.

### **Participants**

I used Amazon's Mechanical Turk's online marketplace to recruit participants for our pilot study. The participants were 142 people from the USA (77 male, 65 female). The participants were 81% white American, 5% Asian American, 5% Black American, 4% Latino

American, 4% Native American (1% identified as 'other'). 57% identified as Christian, 14% identified with 'other religion' and 29% identified with no religion. An attention check was used to examine the level of attention participants paid during the experiment. This question asked participants to simply move a slider from 0 to 100. Together, 14 participants were removed from analyses because they failed to answer the attention check or were not US citizens, leaving 128 American citizens. To reduce the amount of time taken to complete the study, I randomly assigned participants to complete measures relating to only one half the outgroups on the list or the other half.

## Measures

**Animalistic dehumanization.** A 4-item measure taken from Leidner, Castano, Zaiser and Giner-Sorolla (2010) assessed participants' animalistic dehumanization of various groups. Participants were instructed to indicate how much they agreed with the following statements about each social group. A sample question from the scale is "Some aspects of XXX life are typical of a backward culture". Participants answered each question using a scale anchored from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), where lower numbers indicate greater blatant animalistic dehumanization. For each social group, the four items were added together to create a composite score of animalistic dehumanization. Each scale had good internal validity ( $\alpha > .70$ ). For a full copy of the measure, please refer to Appendix B. A second animalistic dehumanization measure was also taken directly from previous work (Kteily, Bruneau, Waytz, & Cotterill, 2015). Participants were presented with a single figure depicting different stages of human evolution. Participants were instructed to indicate from 1 to 100 how evolved they thought various groups were. A score of 100 indicates the target is fully evolved whereas a score of anything below suggests a level of dehumanization. Please refer to Appendix C for a copy of the figure used.

**Mechanistic dehumanization.** A 4-item measure taken from Bastian and Haslam (2010) assessed participants' blatant mechanistic dehumanization of various groups. Participants were instructed to indicate how much they agreed with the following statements about each social group. A sample question from the scale is "XXX are open-minded and can think clearly". Participants answered each question using a scale anchored from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), where lower numbers indicate greater mechanistic dehumanization. For each social group, the four items were added together to create a composite score of blatant mechanistic dehumanization. Each scale had good internal validity ( $\alpha > .70$ ). For a full copy of the measure, please refer to Appendix B.

## Results

Because our participants only answered dehumanization for half of the target groups, we computed separate repeated measures ANOVAs on each variable for both groups of participants.

**Animalistic dehumanization.** Using the first half of the participants, a repeated-measures ANOVA revealed a significant difference in the animalistic dehumanization of various groups,  $F(1, 62) = 13.01, p < .001$  (see Table 1). Similarly, using the second half of the participants, a repeated-measures ANOVA also revealed a significant difference in the animalistic dehumanization of various groups,  $F(1, 61) = 10.96, p < .001$  (see Table 1).

Looking at another blatant measure of animalistic dehumanization, and using the first half of the participants, a repeated-measures ANOVA revealed a significant difference in the ascent dehumanization of various groups,  $F(1, 62) = 11.53, p < .001$  (see Table 1). Again, using the second half of the participants, a repeated-measures ANOVA revealed a significant difference in the ascent dehumanization of various groups,  $F(1, 63) = 13.76, p < .001$  (see Table 1).

**Mechanistic dehumanization.** A repeated-measures ANOVA using the first half of participants revealed a significant difference in the mechanistic dehumanization of various groups,  $F(1, 57) = 14.80, p < .001$  (see Table 1). A repeated-measures ANOVA using the second half of participants also revealed a significant difference in the mechanistic dehumanization of various groups,  $F(1, 54) = 12.19, p < .001$  (see Table 1).

*Table 1.*

Means and standard deviations for animalistic, mechanistic and ascent dehumanization of various groups where lower numbers equal more dehumanization.

Target group	Animalistic dehumanization (SD)	Ascent dehumanization (SD)	Mechanistic dehumanization (SD)
America	5.11 (1.08)*	95.33 (8.57)*	5.13 (.99)*
Mexico	4.31 (1.05)	88.24 (17.25)	4.96 (.82)
Indonesia	4.38 (1.04)	87.02 (19.79)	4.86 (.86)
Djibouti	4.15 (1.16)	84.86 (21.16)	4.66 (.96)
Jordan	4.42 (1.10)	86.66 (20.02)	4.68 (1.00)
Muslims	4.22 (1.24)	82.46 (26.29)	4.19 (1.32)
America ^	4.71 (1.02)	87.41 (16.80)	4.96 (.98)
Haiti	4.06 (.94)	72.19 (27.57)	4.77 (1.11)
Thailand	4.43 (1.05)	76.23 (22.48)	4.84 (.90)
Kenya	3.85 (1.12)	73.16 (24.80)	4.50 (1.28)
Pakistan	3.85 (1.17)**	70.06 (28.30)**	4.19 (1.17)**
Muslims ^	3.98 (1.12)	71.56 (28.60)	4.20 (1.08)

*Note:* ^ Each participant was asked about American, Muslims and four ethnic outgroups, consequently, Americans and Muslims appear twice. \*\* Indicates greatest level of dehumanization was towards Pakistanis.

## Discussion

I chose to use Pakistan as the outgroup for our main study because it was the best fit for our criteria. Firstly, Pakistan received the most dehumanization from American participants. Pakistan was also an ideal outgroup because America and Pakistan publically offered a similar amount of aid (relative to GDP) to each other following their recent natural disasters.

### **Main Study**

Using Pakistan as the outgroup of choice for the study, I wished to examine how knowledge of aid offered in response to an American or Pakistani natural disaster would impact blatant and subtle dehumanization of Pakistanis and Americans. To do this, I chose a natural disaster that took place in the USA or Pakistan in recent history. This was chosen to be similar in terms of both loss of life and economic impact. The corresponding natural disasters were Hurricane Katrina, a destructive hurricane that swept the south coast of the United States, and the 2010 flooding in Pakistan, which occurred after severe monsoon rains and lead to extensive flooding. The number of fatalities for both disasters was similar (approx. 2000) and both had similar levels of economic impact with respect to the nation's GDP. I chose to only measure animalistic dehumanization in the main study because participants showed greater animalistic dehumanization of Pakistanis compared to mechanistic dehumanization in the pilot study. However, I chose to use three types of animalistic dehumanization measures with varying levels of blatancy. These included two blatant measures and one subtle measure (infracumanization).

### **Method**

#### **Participants**

A total of 318 participants completed the study. Of these participants, 55 participants were removed from analyses because they either were not US citizens, or failed a very basic manipulation check leaving a total of 263 American participants (147 female, 115 male, 1

unidentified). The manipulation check used here was a basic one that simply asked participants to complete a multiple-choice question on which country the natural disaster they read about took place in. Participants who could not answer this very basic question correctly had clearly not read the manipulation at all. Participants were recruited from mechanical Turk and were given US\$2 in return for their participation. Participants included 211 White Americans, 13 Black Americans, 13 Asian Americans, 11 Latino Americans, 10 Native Americans (9 participants described their ethnicity as ‘mixed’ or ‘other’). Participants ranged in age from 17 to 74 years ( $M = 36.65$ ,  $SD = 12.93$ ).

### **Manipulations**

Participants read one of six manipulations which were adapted from recent work alleviating dehumanization (Saguy, et al., 2015). I used news stories that were based on actual events to manipulate the direction of help (ingroup to outgroup vs. outgroup to ingroup) and the amount of aid given (no aid vs. small amount of aid vs. large amount of aid).

**Ingroup Disaster.** Half of the participant’s manipulation opened with a paragraph on hurricane Katrina (an ingroup disaster) and the impact it had on Americans (the ingroup). In the control condition, the text ended after this paragraph.

In the small and large aid conditions, participants read an additional paragraph about Pakistan (the outgroup) donating either a small or a large amount of aid to the victims of hurricane Katrina (the ingroup). I operationalized the amount of aid as the amount of doctors who offered their help and also the amount of money that was offered from everyday citizens and the governments of the country responding to the disaster. The two manipulations were carefully written to be similar in order to avoid potential confounds (see Appendix A). Small and large aid conditions differed in terms of the number of doctors who volunteered (6 vs. 60) to help, the amount of aid that was given by the country in US dollars (1% vs 20% of the

country's humanitarian budget), and the amount of money donated by average citizens (\$50,000 vs. \$500,000).

**Outgroup disaster.** The remaining half of the participants read about the 2010 Pakistan floods (an outgroup disaster) and the impact it had on Pakistanis (the outgroup). In the control condition, the text ended after this paragraph. However, in the low and high aid conditions, participants read an additional paragraph about America (the ingroup) donating either a small or a large amount of aid to the victims of the Pakistan floods (the outgroup). I operationalized the amount of aid exactly the same as the ingroup disaster (see above), except for the amount of money offered which was adjusted for GDP (see Appendix A).

## Measures

**Infrahumanization.** Adapted from previous work, participants were asked various questions about the kinds of emotions they thought both Pakistanis and Americans would have felt following the disaster they read about. Similar to previous research (e.g. Cuddy et al; 2007), participants completed seven items relating to negative secondary emotions (grief, sorrow, mourning, anguish, guilt, remorse, resentment) and seven relating to negative primary emotions (confusion, pain, distress, fear, panic, anger, rage). I only measured negative emotions due to the context of our manipulation which involved a fatal natural disaster (Cuddy et al., 2007). Responses were anchored from 1 (*Not At All*) to 5 (*Extremely*). I created four subscales to examine infrahumanization: these were for Pakistani primary emotions ( $\alpha = .92$ ), Pakistani secondary emotions ( $\alpha = .86$ ), American primary emotions ( $\alpha = .90$ ), and American secondary emotions ( $\alpha = .85$ ), similar to what has been done in past rehumanization work (Albarello & Rubini, 2010; Vezzali, Capozza, Stathi & Giovannini, 2012).

**Animalistic Dehumanization.** To assess participants' *blatant* animalistic dehumanization of Pakistanis, an 8-item measure was taken directly from work by Leidner



and colleagues (2010). Participants were instructed to “indicate how much they agreed with the following statements regarding Pakistanis”. A sample question from the scale is “Some aspects of Pakistani life are typical of a backward culture”. Participants answered each question using a scale anchored from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), where higher numbers indicate greater blatant animalistic dehumanization. The eight items had good internal validity ( $\alpha = .86$ ). For a full copy of the measure, please refer to Appendix B.

**Ascent Dehumanization.** The second blatant dehumanization scale was also taken directly from previous work (Kteily, Bruneau, Waytz, & Cotterill, 2015). Participants were presented with a single figure depicting different stages of human evolution. Participants were instructed to indicate from 1 to 100 how developed they thought Americans and Pakistanis are (higher numbers indicate more humanness). In addition, similar to previous work (Kteily et al., 2015), a measure of ascent dehumanization of Pakistanis relative to the ascent dehumanization of Americans was computed. A score of zero indicates that participants see both groups as equally evolved, whereas a score of anything above zero indicates blatant outgroup dehumanization. Please refer to Appendix C for a copy of the figure used.

## **Procedure**

Participants completed the study under the guise of a study looking at the difference in memory performance following exposure to a natural versus human-made disaster. All participants were given informed consent, and the right to withdraw their consent was made clear. Participants first answered general demographic questions and completed a filler task where they had to complete words from a list of scrambled letters. Participants were then randomly assigned to one of six conditions and read the corresponding manipulation. Participants then answered the infrahumanization measure, a manipulation check, the animalistic dehumanization measure, and the ascent dehumanization measure. Participants

were thanked for their time, given US\$2 and a debrief acknowledging the true nature of the study.

## **Design**

The study employed a 2 (country of disaster: ingroup vs. outgroup) x 3 (amount of aid: no aid vs. small aid vs. large aid) between-subjects design. The two factors were direction of aid (outgroup to ingroup vs. ingroup to outgroup) and amount of aid given (control vs. small vs. large).

## **Results**

### **Data Screening**

There were no single outliers, however, graphing the data showed there were ceiling and floor effects for ascent dehumanization of both Americans (skewness = -3.04,  $SE = .15$ ; kurtosis = 11.70,  $SE = .30$ ) and Pakistanis (skewness = -1.93,  $SE = .15$ ; kurtosis = 3.42,  $SE = .30$ ). However, given adequate sample size, this was not deemed to be an issue (Field, 2013). Limitations of the non-normal distribution of the data and directions for future sampling methods are discussed on page 32 of the limitations section in the discussion.

Please see Appendix D for the means, standard deviations and significance tests of infrahumanization and blatant dehumanization for all conditions.

### **Infrahumanization**

A 2 (disaster origin: hurricane Katrina vs. Pakistan floods) x 3 (amount of aid: control vs. low aid vs. high aid) x 2 (emotion type: secondary vs. primary) x 2 (target: outgroup vs. ingroup) mixed-model ANOVA, where emotion type and target were within subjects factors, highlighted that all infrahumanization effects were qualified by a significant 4-way interaction,  $F(2, 288) = 3.58, p = .03, \eta_p^2 = .02$ .

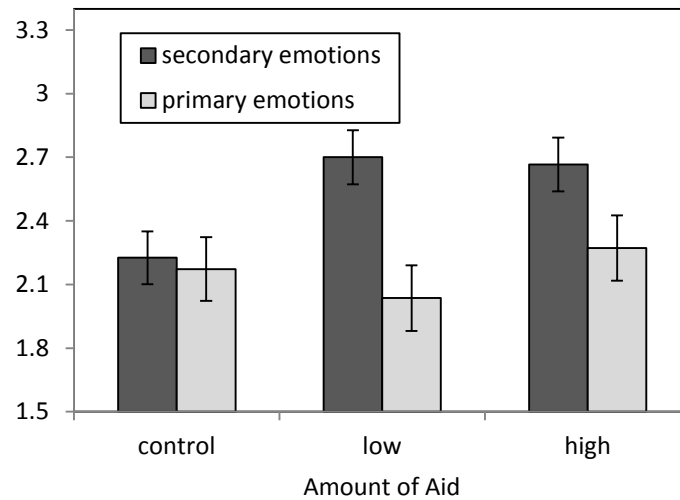
**Ingroup Disaster.** To deconstruct the 4-way interaction, I began by computing a 3 way interaction for participants who read about hurricane Katrina as opposed to the Pakistani

floods. Looking specifically at those participants in the hurricane Katrina condition, a 3 (amount of aid: control vs. low aid vs. high aid) x 2 (emotion type: secondary vs. primary) x 2 (target: outgroup vs. ingroup) mixed-model ANOVA, where emotion type and target were within subjects factors, revealed a significant 3-way interaction,  $F(2, 121) = 4.57, p = .01, \eta_p^2 = .07$ .

Next, I broke the 3 way interaction down to examine attributions of secondary and primary emotions attributed to the outgroup following reading about hurricane Katrina. A 3 (amount of aid: control vs. low aid vs. high aid) x 2 (emotion type: secondary vs. primary) mixed-model ANOVA, where emotion type was the within subjects factor revealed a significant interaction between amount of aid and outgroup emotion type,  $F(2, 121) = 12.37, p < .001, \eta_p^2 = .17$ .

A factorial ANOVA revealed that for those participants who read about hurricane Katrina, there was a significant difference in the secondary emotions attributed to Pakistanis between the amount of aid factor,  $F(2, 121) = 4.03, p = .02$ . Post-hoc tests using Sidak adjustments for multiple comparisons revealed that participants who read that Pakistanis provided a small ( $M = 2.70, SD = .86$ ) or large ( $M = 2.67, SD = .76$ ) amount of aid to the victims of hurricane Katrina attributed significantly more secondary emotions to Pakistanis, than did participants who read about hurricane Katrina and no mention of aid ( $M = 2.23, SD = .93$ ) (see Figure 1). There was no difference in the attribution of secondary emotions to Pakistanis regardless of whether they read that Pakistan gave a small ( $M = 2.70, SD = .86$ ) or large ( $M = 2.67, SD = .76$ ) amount of aid.

A factorial ANOVA revealed that for those participants who read about hurricane Katrina, there was no significant difference in the primary emotions attributed to Pakistanis between the amount of aid factor,  $F(2, 121) = .60, p = .55$ . Please see Figure 1 below for a graph of the means.



*Figure 1.* Shows the alleviation of infrahumanization (increased secondary emotions) following news of Pakistan sending either low and high aid to America.

I next examined the attributions of secondary and primary emotions to the ingroup after reading about hurricane Katrina. A 3 (amount of aid: control vs. small aid vs. high aid) x 2 (emotion type: secondary vs. primary) mixed-model ANOVA, where emotion type was the within subjects factor revealed there was no interaction between amount of aid and ingroup emotion type,  $F(2, 121) = 1.16, p = .32$ . Though I did not have specific pre-planned hypotheses surrounding attributions of emotions, American participants who read about hurricane Katrina did not attribute more secondary than primary emotions to the ingroup,  $F(1, 121) = 1.44, p = .23$ . Please see Figure 2 below for a graph of the means.

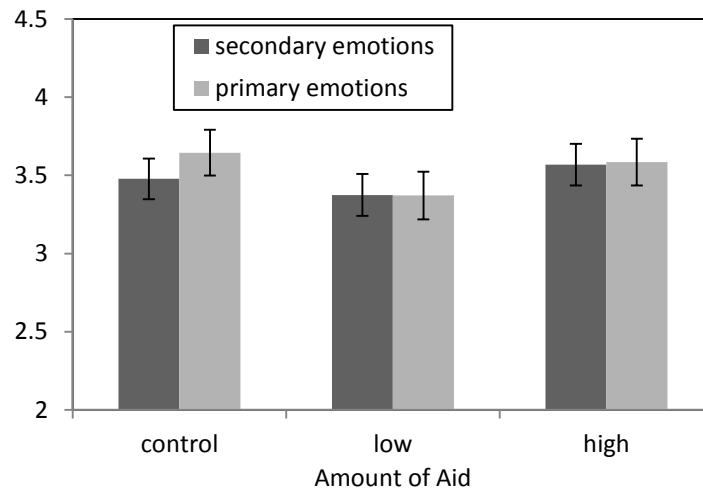


Figure 2. Shows ingroup infrahumanization (no differentiation between secondary and primary emotions).

**Outgroup Disaster.** Next I computed a 3 way interaction for participants who read about the Pakistan floods. Looking specifically at those participants in the Pakistan floods condition, a 3 (amount of aid: control vs. small aid vs. high aid) x 2 (emotion type: secondary vs. primary) x 2 (target: outgroup vs. ingroup) mixed-model ANOVA, where emotion type and target were within subjects factors, showed that the 3-way interaction was not significant,  $F(2, 136) = 5.82, p = .56$ .

A factorial ANOVA confirmed that for those participants who read about the Pakistan floods, there was no difference in the secondary emotions attributed to Pakistanis between the amount of aid factor,  $F(2, 136) = .61, p = .55$ . A second factorial ANOVA confirmed that for those participants who read about the Pakistan floods, there was no difference in the primary emotions attributed to Pakistanis between the amount of aid factor,  $F(2, 136) = .57, p = .57$ . Please see Figure 3 below for a graph of the means.

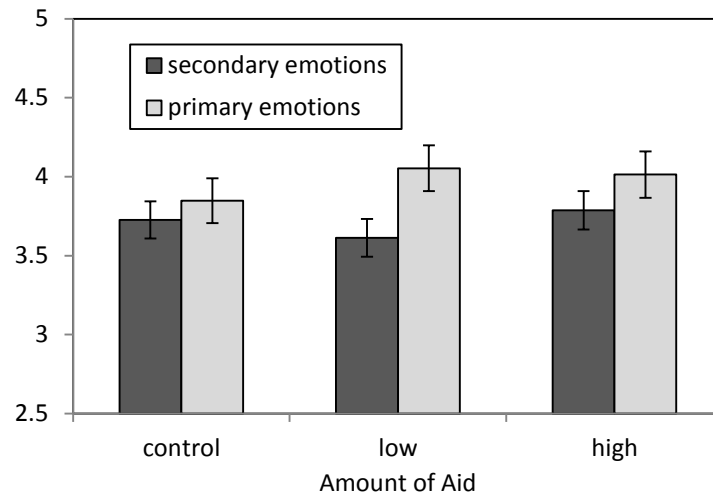


Figure 3. Shows the perpetuation of infrahumanization following news of the Pakistan floods irrespective of aid being given.

In the 3 way interaction output, there was a significant emotion by target interaction,  $F(1, 136) = 91.10, p < .001, \eta_p^2 = .40$ . Though I did not have pre-planned hypotheses surrounding attributions of emotions to the ingroup, a 3 (amount of aid: control vs. small aid vs. high aid) x 2 (emotion type: secondary vs. primary) mixed-model ANOVA, where emotion type was the within subjects factor, revealed that, regardless of the level of aid, there was significantly more secondary compared to primary emotions attributed to the ingroup,  $F(1, 136) = 83.78, p < .001, \eta_p^2 = .38$ . Please see Figure 4 below for a graph of the means.

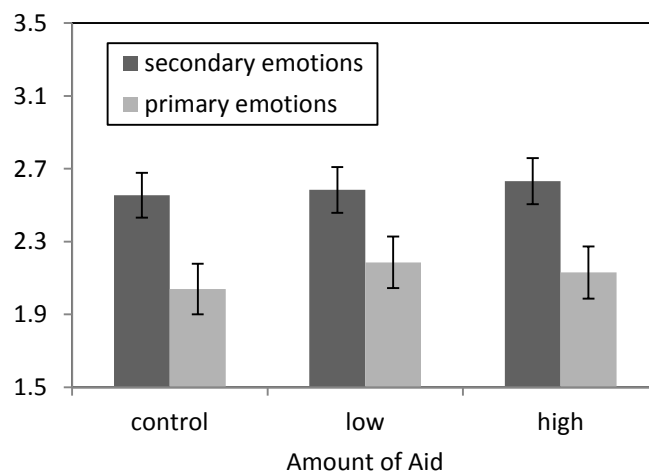


Figure 4. Shows classic ingroup bias associated with infrahumanization (i.e. more secondary compared to primary emotions attributed to the ingroup).

### Animalistic Dehumanization

A 2 (disaster origin: hurricane Katrina vs. Pakistan floods) x 3 (amount of aid: control vs. small aid vs. large aid) factorial ANOVA found there was no interaction of disaster origin and amount of aid on the animalistic dehumanization of Pakistanis,  $F(1, 257) = .33, p = .72$ . Participants who read about hurricane Katrina with either low ( $M = 3.61, SD = 1.05$ ) or high ( $M = 3.45, SD = 1.09$ ) aid given by Pakistan did not show significantly less blatant dehumanization of Pakistanis than participants who read about hurricane Katrina and no mention of aid ( $M = 3.87, SD = 0.89$ ).

Similarly, participants who read about the Pakistan floods with either low ( $M = 3.86, SD = 1.08$ ) or high ( $M = 3.91, SD = 1.13$ ) aid given by America did not show significantly less blatant dehumanization of Pakistanis than participants who read about the Pakistan floods and no mention of aid ( $M = 4.09, SD = 1.16$ ). Please see Figure 5 below for a graph of the means.

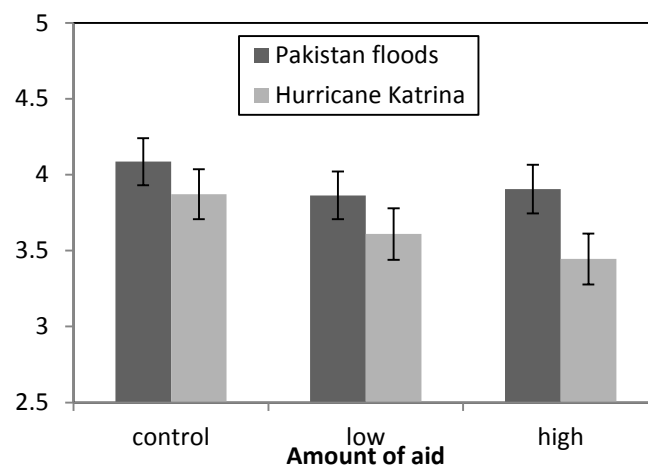


Figure 5. Shows no significant reduction in blatant animalistic dehumanization of Pakistanis.

### Ascent Dehumanization

A 2 (disaster origin: hurricane Katrina vs. Pakistan floods) x 3 (amount of aid: control vs. small aid vs large aid) factorial ANOVA found there was no interaction of disaster origin and amount of aid on the ascent dehumanization of Pakistanis,  $F(2, 257) = .32, p = .73$ . Participants who read about hurricane Katrina with either low ( $M = 91.53, SD = 12.83$ ) or high ( $M = 90.02, SD = 18.11$ ) aid given by Pakistan did not show significantly less blatant

ascent dehumanization of Pakistanis relative to Americans than participants who read about hurricane Katrina and no mention of aid ( $M = 88.93$ ,  $SD = 17.58$ ). Similarly, participants who read about the Pakistan floods with either low ( $M = 84.78$ ,  $SD = 23.24$ ) or high ( $M = 87.69$ ,  $SD = 18.61$ ) aid given by America did not show significantly less blatant ascent dehumanization of Pakistanis than participants who read about the Pakistan floods and no mention of aid ( $M = 182.69$ ,  $SD = 24.64$ ).

Similar to previous work (Kteily, Bruneau, Waytz, & Cotterill, 2015), a 2 (disaster origin: hurricane Katrina vs. Pakistan floods) x 3 (amount of aid: control vs. small aid vs large aid) factorial ANOVA found there was also no interaction of disaster origin and amount of aid on the ascent dehumanization of Pakistanis *relative* to Americans,  $F(2, 257) = 1.30$ ,  $p = .27$ . Participants who read about hurricane Katrina with either low ( $M = 2.60$ ,  $SD = 8.91$ ) or high ( $M = 3.66$ ,  $SD = 22.27$ ) aid given by Pakistan did not show significantly less blatant ascent dehumanization of Pakistanis relative to Americans than participants who read about hurricane Katrina and no mention of aid ( $M = 3.65$ ,  $SD = 14.18$ ). Similarly, participants who read about the Pakistan floods with either low ( $M = 8.13$ ,  $SD = 18.40$ ) or high ( $M = 3.20$ ,  $SD = 8.97$ ) aid given by America did not show significantly less blatant ascent dehumanization of Pakistanis than participants who read about the Pakistan floods and no mention of aid ( $M = 10.65$ ,  $SD = 19.02$ ). Please see Figure 6 below for a graph of the means.

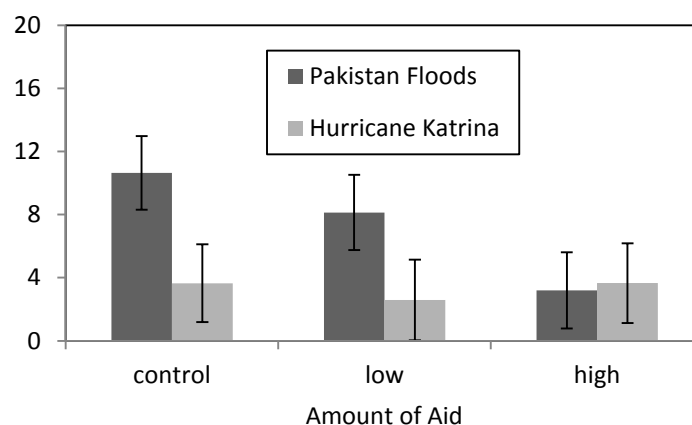


Figure 6. Shows no significant reduction in ascent dehumanization of Pakistanis relative to Americans. Note: positive numbers indicate dehumanization of Pakistanis relative to Americans.



## Discussion

### Overview

The current research examined whether knowledge of intergroup helping in response to a major natural disaster increases the humanity attributed to a previously dehumanized outgroup. I hypothesized that news of Pakistan sending aid to the victims of hurricane Katrina (an American disaster) would lend itself to American participants perceiving Pakistanis in a more human-like fashion regardless of the amount of aid they offered. Furthermore, I wished to replicate the findings of Saguy and colleagues (2015) in a context that is not conflict-ridden to see whether news of Americans helping Pakistanis would increase humanizing perceptions of Pakistanis by American participants. Moreover, I predicted that such rehumanization would occur as a function of the amount of aid given by the ingroup to the outgroup because of effort justification (Aronson & Mills, 1959).

**Ingroup Disaster.** The results supported my primary hypotheses that news of aid would alleviate dehumanization. There was a significant reduction in the infrahumanization (a subtle measure) of Pakistanis after reading about Pakistan sending aid to the victims of Hurricane Katrina, compared to reading about hurricane Katrina with no mention of aid given by Pakistan. This effect occurred regardless of whether Pakistan had offered small or large amounts of aid to Americans following the disaster. Interestingly, there was no difference in the secondary and primary emotions attributed to the ingroup across conditions suggesting that receiving aid had an impact on outgroup, but not (subtle) ingroup humanity. Notably, I did not find the classic infrahumanization effect of greater secondary emotions, relative to primary emotions, attributed to the ingroup following news of hurricane Katrina, irrespective of whether Pakistan gave aid or not. I did not, however, find any significant changes in blatant dehumanization between any conditions.

**Outgroup Disaster.** There was no reduction in the subtle or blatant dehumanization of Pakistanis after reading about America sending aid to the victims of the Pakistan floods, compared to reading about the Pakistan floods with no mention of aid. I did, however, observe the ingroup bias associated with infrahumanization of greater secondary versus primary emotions attributed to the ingroup.

### **Theoretical Contribution**

The current work highlights that brief exposure of aid given to Americans (the ingroup) from Pakistanis (an outgroup) may simultaneously reduce the outgroup bias and ingroup favouritism associated with infrahumanization. The reduction in ingroup favouritism I found is evident in that I did not find the classic infrahumanization effect of greater secondary emotions, relative to primary emotions, attributed to the ingroup following news of hurricane Katrina (irrespective of whether Pakistan gave aid or not). The current work also suggests that news of aid given to Pakistanis (an outgroup) from Americans (the ingroup) may not always benefit intergroup relations.

### **Ingroup Disaster.**

***Rehumanizing the Outgroup.*** The finding that news of an outgroup helping the ingroup can alleviate infrahumanization of the outgroup is consistent with research on the relationship between dehumanization and intergroup help. For example, the humanity people attribute to others has been shown to impact on their willingness to help an outgroup following a natural disaster (Andrighetto, Baldissarri, Lattanzio, Loughnan, & Volpato, 2014; Cuddy, Rock, & Norton, 2007). In addition, not only might we help those who we deem have a more complex mind, but we may also increase, or decrease the humanity we attribute to others to correspond with how the ingroup has treated them (Saguy et al., 2015). Saguy and colleagues (2015) experimentally found that news of fellow ingroup members helping an outgroup aligns perceptions of the outgroup with the ingroup's act of kindness towards the

outgroup. This finding is in line with Delgado and colleagues (2012) who found that news of an outgroup giving aid to a third-party can reduce infrahumanization of the group that helped. The authors suggest that prosocial behaviour is a uniquely human act which leads participants to attribute uniquely humanity to the group that has given help (Gilbert & Malone, 1995, Delgado et al., 2012).

Following Saguy and colleagues (2015), I hypothesized that news of an outgroup helping the ingroup would facilitate participants to align their perceptions of the outgroup with the outgroups act of kindness towards the ingroup. Indeed, the current work found supporting evidence that news of an outgroup helping the ingroup can foster more humanized outgroup perceptions, measured by the attribution of secondary emotions. Our finding of alleviating infrahumanization of the outgroup becomes rather interesting when taken with our finding that participants who read about hurricane Katrina infrahumanized the ingroup regardless of whether Pakistan sent aid or not. What this suggests is that our prime may have had an impact on both outgroup *and* ingroup humanization.

***Infrahumanizing the Ingroup.*** Though I did not have pre-planned hypotheses for attributions of emotions to the ingroup; I found unexpected evidence that Americans infrahumanized the ingroup, after reading news of hurricane Katrina, irrespective of whether Pakistan sent aid or not. That is, we did not observe the classic infrahumanization effect of a greater number of secondary emotions, relative to primary emotions, attributed to the ingroup. It may well be that our manipulation lead participants to experience a temporary loss of power which may have levelled an intergroup power dynamic (Civile & Obhi, 2015). Civile and Obhi (2015) showed that experimentally inducing feelings of low power can lead to more humanizing perceptions of dehumanized women (Civile & Obhi, 2015). This interpretation may well explain both the decrease in outgroup bias (increased outgroup

secondary emotions), and decrease in ingroup favouritism (reduced ingroup secondary emotions) after reading about Pakistan sending aid to America.

However, a second explanation can also describe the ingroup infrahumanization. This unexpected finding could be explained alongside the distinction between outgroup derogation and ingroup humanization (Vaes, Leyens, Paladino & Miranda, 2012). As humanizing the ingroup is moderated by ingroup identification (Demoulin, et al., 2009); infrahumanizing the ingroup could perhaps be explained by participants distancing themselves from the ingroup as a strategy to save face, when faced with reminders of a controversial ingroup disaster (e.g., the Katrina controversy; Cuddy, Rock, & Norton, 2007). Considering the nation's slow response to hurricane Katrina, American participants' infrahumanization of fellow Americans, following news of hurricane Katrina, could represent collective guilt over the nation's failure to respond in a timely manner. In this way, (at least temporarily) infrahumanizing the ingroup may have alleviated guilt by discounting the victims' of hurricane Katrina's capacity to suffer. Notably, I did not ask participants about the *victims* suffering, but rather *national* suffering after the disaster. Future work could examine this explanation in two ways. Collective guilt could be measured using the same paradigm and the addition of a mediation analysis to examine the role of guilt can be explored. Alternatively, future work could use the current method but with a different ingroup disaster and examine whether it produces similar ingroup infrahumanization. In a related vein, future work could also examine the impact of American citizens helping victims of hurricane Katrina (e.g. ingroup helps ingroup). This could be contrasted with the impact of news of the outgroup helping each other (e.g. outgroup to outgroup help) following a disaster. In light of our findings, perhaps this would render participants to humanize the ingroup if they hear that the victims of hurricane Katrina received aid from fellow Americans.

### **Outgroup Disaster.**

***Infrahumanizing the Outgroup.*** When American participants read about a Pakistani disaster, irrespective of whether aid was given by Americans to Pakistanis, participants did not show any increase in the secondary emotions attributed to Pakistanis. My subtle infrahumanization findings (but perhaps not my blatant ascent findings) are inconsistent with Saguy and colleagues (2015) who found that having participants read about the ingroup helping outgroup members lead to more blatant humanizing perceptions of the outgroup.

The current work suggests that news of an outgroup disaster, regardless of hearing about the ingroup giving them aid, may (subtly) backfire and perpetuate infrahumanization of the outgroup that was helped. Because of the limitations that I address in the subsequent sections, caution must be taken when interpreting this discrepancy. When there was no mention of aid, news of a Pakistani disaster lead to infrahumanization of Pakistanis. However, when participants read about the Pakistan floods and America giving increasingly larger amounts of aid, infrahumanization remained unchanged.

There are, however, four notable differences between Saguy and colleagues (2015) and the current work. Firstly, I examined both blatant and subtle dehumanization, whereas Saguy et al (2015) measured only blatant dehumanization. Secondly, I examined infrahumanization of the ingroup (which offers a more nuanced look at rehumanization strategies), whereas Saguy et al (2015) did not. Thirdly, Saguy and colleagues (2015) examined ingroup to outgroup aid during a human-caused disaster (i.e. the Israeli-Palestine conflict), whereas the current work examined ingroup to outgroup aid following a natural disaster (i.e. the Pakistan floods). Finally, the current findings were not examined in the context of intergroup violence and, as the authors discuss, the benefits of intergroup aid may be less pronounced in a non-violent intergroup context (Saguy, et al., 2015, p. 5). This may be because a non-violent context may not provide a serious enough reason to justify the

ingroup's act of kindness towards the outgroup, and may unfortunately lead to feelings of power over the outgroup that was helped (Civile and Obhi, 2015).

***Humanizing the Ingroup.*** Our mixed findings between subtle and blatant measures of the outgroup become less ambiguous when taken alongside our finding that those same participants humanized the ingroup when reading about an outgroup disaster. Again, this suggests that our prime may have had an impact on both outgroup *and* ingroup perceptions.

When Americans read about the Pakistan floods, they attributed more secondary emotions to the ingroup, compared to primary emotions, regardless of whether America gave Pakistan aid or not. Because this effect was found in the control condition as well, this may imply that news of an outgroup experiencing a disaster, regardless of whether the ingroup helped them, may perpetuate the subtle ingroup favouritism of greater attributions of secondary emotions compared to primary emotions to the ingroup (recall this was the effect that was alleviated after reading about hurricane Katrina).

Taken together, the current work supports the small body of experimental work which has begun to outline the parameters for successful rehumanization. What is becoming apparent for the process of rehumanization to occur is that there ought to be information which recalibrates people's moral compass to reconsider their perspective of the dehumanized target. Previous work has shown that this information can be derived from imagining positive interactions with the outgroup (Vezzali et al., 2012); complex descriptions of the outgroup's identity (Albareello & Rubini, 2012; Prati, Vasiljevic, Crisp, & Rubini 2015); knowledge of the out group's achievements and intentions (Bernard et al., 2015); and finally, manipulating the participants state feelings of power (Civile & Obhi, 2015). Indeed, the current findings fit the existing literature by providing an additional circumstance in which humanity is attributed to the outgroup.

An interesting theoretical question raised by the current work is whether or not the current findings would replicate with financial disasters. Following the recent financial crisis that erupted in 2007, there has been international negative press about how incapable certain countries are at managing their finances, including America and several European countries (e.g. the PIIGS nations: Portugal, Italy, Ireland, Greece and Spain) (e.g. Buiter, 2007). Future work could explore whether the current findings would replicate to news of intergroup *financial* aid following financial disasters.

### **Broader implications**

The current findings have several real world implications. It may be that having more media and discussion surrounding the ingroup receiving help following natural disasters could lead to a reduction in intergroup bias via perceiving outgroups as more human and perhaps similar to the ingroup. In the particular context of the national response to hurricane Katrina, this notion is rather interesting. There is a fair amount of press surrounding the government's failure to a) act, and b) accept help from other countries. Perhaps the failure to accept outgroup help following natural disasters has a nuanced political undertone. Additionally, the current work suggests that media portrayals of foreign victims of natural disasters may actually perpetuate intergroup bias. For example, in attempt to rationalize why these things are happening to these people and perhaps why no one is helping them. One way to rationalize their suffering is to minimize it, and the best way to do that, is to dehumanize them.

### **Limitations and Future Research**

There are several limitations of the current study which suggest caution should be taken when interpreting the findings of this study.

**Participants.** Firstly, the sample of participants I used may be of concern. I used an anonymous sample of Americans from the online MTurk marketplace. Though this sample

has its merits, including a wide variety of individuals from an array of backgrounds, it also has its downfalls. Specifically, as the entire study is completed online, I had no control over who conducted the study or the conditions under which they did the experiment. However, recent work suggests that MTurk participants may be more attentive to the study than typical university student samples (Ramsey, Thompson, McKenzie & Rosenbaum, 2016).

Additionally, as participants get paid for completion of the study, some participants race through the experiment and may not have taken care reading the manipulation or answering the dependent measures honestly. In order to combat these challenges, I used a manipulation check and reverse coded the items of our animalistic dehumanization measure. However, the infrahumanization and ascent measure could not be reverse coded due to the nature of the measure. What's more, I found both ceiling and floor effects in my data which may represent those participants who raced through the experiment without paying attention. Future work may benefit from employing a different means of sampling to replicate the current findings.

**Measures.** Future work could benefit from recording mechanistic dehumanization as the current work chose to focus on only animalistic dehumanization of Pakistanis because of their proximity with the Middle East and some westerners association of the Middle East with backwardness (Kteily, Bruneau, Waytz, & Cotterill, 2015). Secondly, as some items in the animalistic dehumanization scale I used make a Western world versus the rest comparison (with the West setting the norm), future research could also examine the current paradigm with two western countries, where the ingroup is compared to a western outgroup.

Additionally, future work will also benefit from examining potential moderating variables within the current paradigm. As dehumanization and rehumanization are both related to hierarchical thinking, moderating variables such as social dominance orientation and the human-animal divide may provide a more telling story of the results.

## **Conclusion**



The current research examined a way to increase the humanity attributed to a previously dehumanized outgroup. The current findings raise intriguing questions about dehumanization and intergroup relations. Overall, participants infrahumanized the victims of a disaster, regardless of whether the target was in the ingroup or the outgroup. In addition, participants attributed more humanity to the target that was giving aid, regardless of whether they were ingroup members or outgroup members.

That is, American participants who read about Pakistan sending (small or large) aid to the victims of hurricane Katrina attributed significantly more secondary (human) emotions to Pakistanis, compared to participants who read about hurricane Katrina and no mention of aid. Interestingly, participants who read about hurricane Katrina, regardless of whether aid was mentioned, *infrahumanized the ingroup*. These findings suggest that (1) news of hurricane Katrina with no mention of aid may alleviate ingroup (national) favouritism via a reduction in secondary emotions attributed to Americans in general, and that (2) news of Pakistanis helping Americans may alleviate both the ingroup favouritism and outgroup bias associated with infrahumanization.

In addition, those participants who read about the Pakistan floods, regardless of reading about ingroup to outgroup aid, showed the classic infrahumanization effect of more secondary emotions relative to primary emotions attributed to the ingroup, and no such difference in attributions of outgroup emotions. These findings suggest that news of an outgroup disaster, regardless of whether the victims are helped by the ingroup, may, at least in this case, backfire and perpetuate infrahumanization of an outgroup.

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## APPENDIX A

**Pakistan floods control:** You will now be shown a news article about a natural disaster. You will then be asked a series of broad questions before being asked directly about what you read. Please take your time reading this article. Only move on from this page when you feel you will be able to answer questions about what you have read.

*2010 flood: the costliest and one of the deadliest to strike Pakistan*

The 2010 flood was an extraordinarily powerful and deadly flood that carved a wide swath of catastrophic damage and inflicted large loss of life. According to the meteorological department, rainfall of 8 inches was recorded in the Province of Sindh. On July 31st, 20% of Pakistan was flooded with some parts up to 15 feet under water; one million homes to millions of people were directly affected by the hurricane resulting in thousands of injuries and the deaths of more than 1000 persons.

**Hurricane Katrina control:** You will now be shown a news article about a natural disaster. You will then be asked a series of broad questions before being asked directly about what you read. Please take your time reading this article. Only move on from this page when you feel you will be able to answer questions about what you have read.

*Katrina: the costliest and one of the deadliest hurricanes to ever strike the United States*

Hurricane Katrina was an extraordinarily powerful and deadly hurricane that carved a wide swath of catastrophic damage and inflicted large loss of life. On August 31st, 80% of New Orleans was flooded with some parts up to 15 feet under water. The storm itself did a great deal of damage, but its aftermath was catastrophic; over 250,000 homes to more than one million people were directly affected by the hurricane resulting in hundreds of injuries and the deaths of more than 1000 persons.

**US aid to Pakistan low aid:** *America sends aid to Pakistan following devastating flood*

America was one of the countries to offer assistance to the victims of the 2010 Pakistan flood. American medical professionals established the Sindh Response Task Force as a gesture of solidarity and sympathy with the people of Pakistan. The task force is an independent, non-governmental initiative connecting 6 volunteer American doctors and nurses with Pakistani children needing medical attention. US aid to Pakistan following the flooding totalled US\$10 million (1% of the US humanitarian budget). Furthermore, everyday citizens in the US donated an additional US \$500,000 toward relief efforts in Pakistan.

**US aid to Pakistan high aid:** *America sends aid to Pakistan following devastating flood*

America was one of the first countries to offer assistance to the victims of the 2010 Pakistan flood. American medical professionals from various states established the Sindh Response Task Force as a gesture of solidarity and sympathy with the people of Pakistan. The task force is an independent, non-governmental initiative that connected over 60 American volunteer doctors and nurses with Pakistani children needing medical attention. US aid to Pakistan following the flooding totalled over US\$200 million (20% of the US humanitarian budget). Furthermore, everyday citizens in the US donated an additional US\$25,000,000 toward relief efforts in Pakistan.

**Pakistan aid to US low aid:** *Pakistan sends aid to US following devastating Katrina*

Pakistan was one of the countries to offer assistance to the victims of hurricane Katrina. Pakistani medical professionals established the Katrina Response Task Force as a gesture of solidarity and sympathy with the people of the United States. The task force is an independent, non-governmental initiative connecting 6 volunteer Pakistani doctors and nurses with American children needing medical attention. Pakistani aid to the US following Katrina totalled US\$500,000 (1% of the Pakistan humanitarian budget). Furthermore, everyday



citizens in Pakistan donated an additional US\$50,000 toward relief efforts following in the US.

**Pakistan aid to US high aid:** *Pakistan sends aid to US following devastating Katrina*

Pakistan was one of the first countries to offer assistance to the victims of hurricane Katrina. Pakistani medical professionals from all around Pakistan established the Katrina Response Task Force as a gesture of solidarity and sympathy with the people of the United States. The task force is an independent, non-governmental initiative that connected over 60 volunteer Pakistani doctors and nurses with American children needing medical attention. Pakistani aid to the US following Katrina totalled over US\$10 million (20% of the Pakistan humanitarian budget). Furthermore, everyday citizens in Pakistan donated an addition US\$500,000 toward relief efforts in the US.

## APPENDIX B

Animalistic dehumanization scale from Leidner et al (2010). Note: only the first four items were used for the pilot. All items were used in the main study:

“For the next few questions indicate how much you agree or disagree with the following statements about XXX. Try not to think too hard about your answer – the first that comes to mind is often best.”

"Some aspects of XXX life are typical of a backward culture."

"XXX culture is as highly developed as most cultures."

"XXX has still much to learn from Western countries."

"Compared to other populations, XXX are..." (from 1 = less civilized, to 9 = more civilized)

"Do you agree with anthropologists suggesting that the XXX way of life denotes a somewhat lower level of evolutionary development?"

"It is very easy to endorse the values of XXX."

"Compared to Westerners, moral values are less likely to be developed among XXX."

"Compared to Westerners, moral values are less likely to be taught to XXX children."

Mechanistic dehumanization scale used in pilot study (from Bastian and Haslam , 2010):

“For the next few questions indicate how much you agree or disagree with the following statements about XXX. Try not to think too hard about your answer – the first that comes to mind is often best.”

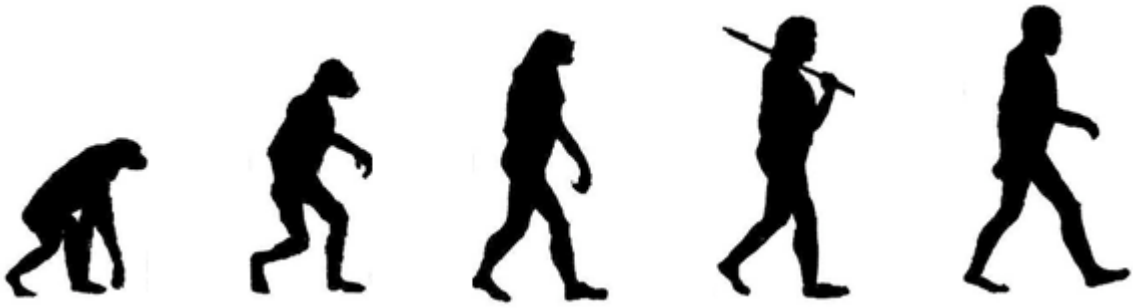
“Are open-minded and can think clearly.”

“Are emotional, responsive and warm..”

“Have depth.”

“Are mechanical and cold like they are robotic.”

## APPENDIX C



‘Ascent of man’ figure from Kteily, Bruneau, Waytz, & Cotterill, (2015) used in both Pilot and main study.

## APPENDIX D

Table. 2

Means and standard deviations of infrahumanization (subtle dehumanization). This includes secondary and primary emotions attributed to both the ingroup and the outgroup, in both the hurricane Katrina and the Pakistan floods conditions.

Disaster	Target	Emotion type	Condition			<i>F</i>	<i>p</i>
			Control (SD)	Small aid (SD)	Large aid (SD)		
Hurricane Katrina	Pakistanis	secondary	2.23 (.93)	2.70 (.86)	2.67 (.76)	(2,121) =4.03	.02*
		primary	2.17 (1.05)	2.04 (.88)	2.27 (.98)	(2,121)=.60	.55
	Americans	secondary	3.48 (.79)	3.38 (.86)	3.57 (.88)	(2,121) =1.16	.32^
		primary	3.65 (.83)	3.37 (.91)	3.59 (1.03)	-	
Pakistan floods	Pakistanis	secondary	3.73 (.91)	3.61 (.68)	3.79 (.69)	(2, 136)=5.82	.56^
		primary	3.85 (1.21)	4.05 (.88)	4.01 (.81)	-	
	Americans	secondary	2.55 (.97)	2.58 (.52)	2.63 (.85)	-	
		primary	2.04 (1.13)	2.19 (.89)	2.13 (.94)	-	

Note: ^ denote non-significant interactions (2-way and 3-way respectively) which correspond to more than one row of means. Higher numbers indicate a greater attribution of emotions.

Table 3.

Means and standard deviations of the blatant dehumanization of both Pakistanis and Americans, in both the hurricane Katrina and the Pakistan floods conditions.

Disaster	Target	Type	Condition			<i>F</i>	<i>p</i>
			Control (SD)	Small aid (SD)	Large aid (SD)		
Hurricane Katrina	Pakistanis	animalistic	3.87 (.89)	3.61 (1.05)	3.45 (1.09)	(1,257) = .33	.72^
		ascent	88.93 (17.58)	91.53 (12.83)	90.02 (18.11)	(2,257) = .32	.73^
	Americans	ascent	92.58 (11.68)	94.13 (12.10)	93.68 (16.69)	(2,257) = .34	.71^
Pakistan floods	Pakistanis	animalistic	4.09 (1.16)	3.86 (1.08)	3.91 (1.13)	-	
		ascent	82.69 (24.64)	84.78 (23.24)	87.69 (18.61)	-	
	Americans	ascent	93.33 (12.01)	92.91 (15.03)	90.89 (17.19)	-	

Note: ^Each interaction was non-significant. The significance statistics correspond to 2-way interactions of disaster origin (e.g. hurricane Katrina vs Pakistan floods) x amount of aid (control vs small vs large) on each dependent variable.